BOOK REVIEWS

THE CHEMISTRY OF NATURAL PRODUCTS, Edited by K W. Bently, Volume I. "The Alkaloids" by K. W. Bently. Interscience Publishers, New York. 1957. pp. 237.

The "Alkaloids" is the first of a series to be published and this is expected to have a wide coverage on the chemistry of natural products. In fact during the last three years a few volumes have already appeared. The aim of these publications as stated in the "Introduction" particularly the present one, is to have a golden mean between exhaustive treatises like "The Alkaloids" edited by Manske and Holmes and "The Plant Alkaloids" by Henry, primarily meant for the benefit of graduate students in British Universities.

It becomes extremely difficult for the author, who has however made notable contributions towards our knowledge of alkaloids, to apply his discretion with judgment consistent with clarity of expression, when he has to deal with an already vast and a rapidly expanding subject in such a short span of about 225 pages. Naturally many important topics of current interest had to be omitted in this book. Particular mention may be made of the absence of any chapter on Rauwolfia and curare alkaloids. Another aspect which merits considerable attention is that sufficient emphasis has been placed on biogenesis for better understanding of the formation of and correlation amongst different groups of alkaloids. It may be mentioned that these half-tested truths and plausible assumptions are now-a-days being accepted as absolutes and realities and this shows some unscientific tender- mindedness on the part of some authors

Coverage of the book is quite commendable and it is a pleasant reading because of profusely neat and hand-drawn structures in every alternate page of the book The only criticism that can be made is that some errors have crept into the book. which are, of course, trivial in nature. Lot of credit goes to the author in presenting this volume at such a low price thereby making it available to a wide circle of readers and from these considerations, purpose of writing this book has been fully justified.

P. C. D.

PRINCIPLES OF PHYSICAL SCIENCE—By F. T. Bonner and M. Phillips, August, 1957, pp. 716, Addison-Wesley Publishing Co., Inc., Reading, Massachusetts, U.S.A. Price $ 7.50.

It is now a well recognised fact that science has become such an integral part of our life that a basic knowledge of it is essential even for persons who are not

directly connected with science. It is a difficult task to give in the compass of a single volume the fundamentals of the physical sciences in a form which can be understood by the readers having no scientific background. In the present book the authors have performed this task very creditably. They have been able to give a coherent picture of the physical sciences from the astronomy of ancient Greeks to the modern chemistry, nuclear physics, geophysics etc. The topics for discussion have been very carefully chosen from the different branches of science so as to represent a good overall picture. The treatment of thevarious scientific phenomena is very clear and interesting. A large number of carefully designed illustrations is given which makes it easier to grasp the fundamentals. The book may be useful to fresh college students of science as additional reading. The large number of instructive examples at the end of each chapter will help to clarify the physical ideas. The get-up of the book is excellent.

B.N.S.

PROCEEDINGS OF THE INTERNATIONAL SYMPOSIUM ON ISOTOPE SEPARATION", edited by Kistemaker, Bigeleisen and Nier. (North-Holland Publishing Co.)

This volume is a compilation of the papers read at the first international symposium on isotope separation held in Amsterdam in 1957, organised by the Netherlands Physical Society in collaboration with the International Union of Pure and Applied Physics. There are at present not many standard books on the theory and method of isotope separation. The publication of this volume giving the latest achievements in this field is most welcome.

The study of the science of isotope separation has received great impetus during the last two decades with the discovery of nuclear fission and the use of separated isotopes as a tool for investigation of problems in chemistry, physics, biology and production technology. The book deals with both the science and the technology of production of isotopes, their purification and properties and covers a wide ground. All the papers are conveniently grouped according to the method of separation employed, under the following nine parts :

1) Chemical Engineering, 2) Molecular Interactions, (3) Chemical Exchange, 4) Electromigration, 5) Distillation, 6) Thermal Diffusion, 7) Diffusion, 8) Electromagnetic Separation, 9) Ultra-centrifuges.

The chemical engineering section deals mainly with the design procedure for large scale isotope separation units starting from basic laboratory data while the second section deals with the physical properties of isotope mixtures whose knowledge is essential for the understanding of the different processes. In the section on "Diffusion" also various aspects of design theory for large diffusion

plants have been discussed. Reports on plants for large scale separation of nitrogen, hydrogen and boron isotopes as well as discussions on the theory of the process of isotope separation by chemical exchange have been included under the section "Chemical Exchange", while separation of isotopes of oxygen, lithium, hydrogen and boron by distillation process, and the economic considerations of a fractional distillation plant have been presented in "Distillation" section. The theory and performance of multi-stage thermal diffusion columns, have been discussed in the section on "Thermal Diffusion" and the production of U^{235} for the Manhattan District programme has been described. The operational experience of electromagnetic separators in Harwell and Oak-ridge has been described in the section on "Electromagnetic Separation". The progress in the practical aspects of isotope separation by the two comparatively new methods of electromigration and gas centrifuge has been reported in another two sections.

From the brief resume of the different sections given above it will be clear that the papers presented at the symposium cover a very wide spectrum of methods now available for isotope separation. The book will be very useful to all those who have some acquaintance with the subject and want to keep themselves abreast of the existing literature and the present trends. Sufficient details about design and construction have been given at several places to make the study more useful and realistic. The editors and the publishers are to be thanked for providing such a collection of up-to-date information about this very modern and developing subject.

B. N. S.